

The project was implemented in python using the following libraries: pandas, numpy, scipy, networkx, random, matplotlib.

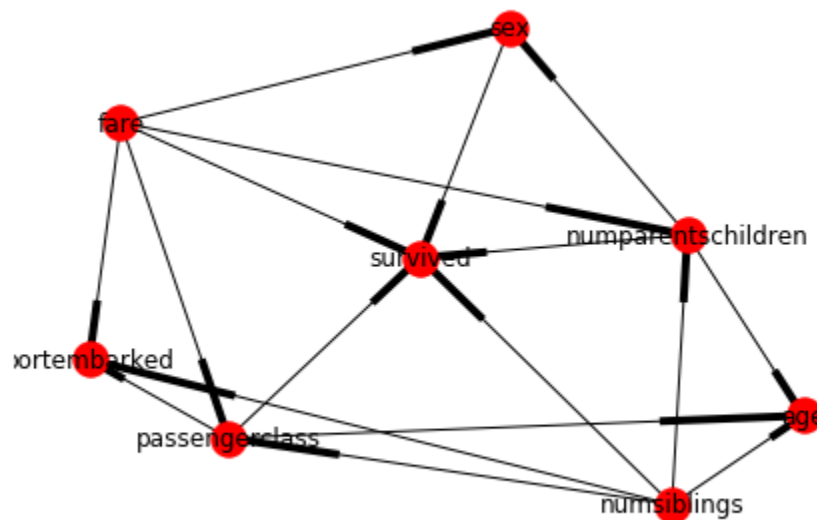
K2 score was computed using hash tables, which allow to iterate through the parents' configurations in a linear time.

Structure learning algorithm is based on a greedy selection of edges in a topological sort order. The K2 score of each node is computed locally, i.e. using decomposition property of K2 score.

Finally, the structure learning algorithm is performed several times over several randomized topological sort orders to avoid getting stuck in a local maximum.

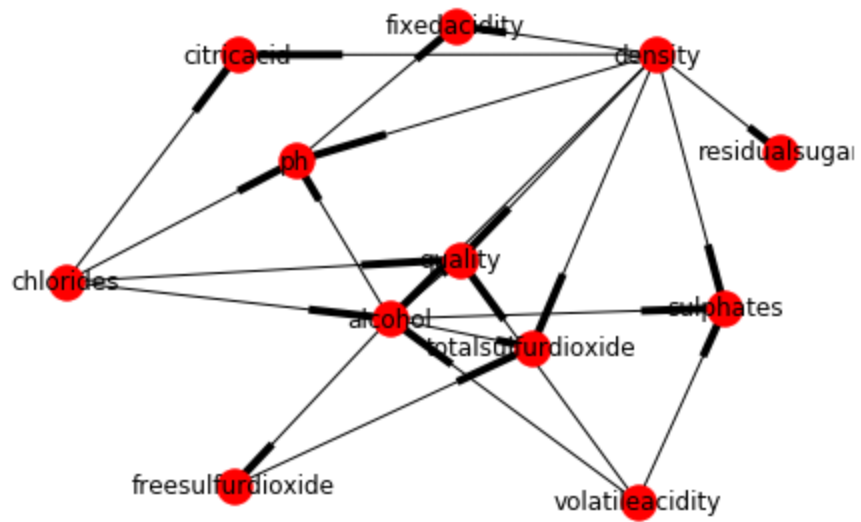
Small dataset

Score: -3814, Runtime: 2 min



Medium dataset

Score: -42162, Runtime: 20 min



Large dataset

Score: -267572, Runtime: 3 hours

